What is claimed is:

1. A method of modulating an immune response in a subject, the method comprising administering an immunogenic peptide portion of a dnaJ heat shock protein (hsp) to the subject, thereby modulating an immune response in the subject.

2. The method of claim 1, wherein the dnaJ hsp is a bacterial dnaJ hsp.

3. The method of claim 2, wherein the bacterial dnaJ hsp is an *E. coli* dnaJ hsp.

4. The method of claim 3, wherein the peptide is:
QDYYEILGVSKTAEE (SEQ ID NO:1),
RKAYKRLAMKYHPDR (SEQ ID NO:2),
QKRAAYDQYGHAAFEQ (SEQ ID NO:3)
QGFFAVQQTCPHCQG (SEQ ID NO:4),
SKTLSVKIPGAVDTG (SEQ ID NO:5),
GDLYVQVQVKQHPIF (SEQ ID NO:6),
YCEVPINFAMAALGG (SEQ ID NO:7),
PINFAMAALGGEIEV (SEQ ID NO:8), or
any combination thereof.

5. The method of claim 1, wherein the dnaJ hsp is a eukaryotic dnaJ hsp.

6. The method of claim 5, wherein the eukaryotic dnaJ hsp is a yeast dnaJ hsp or a vertebrate dnaJ hsp.

7. The method of claim 6, wherein the vertebrate dnaJ hsp is a human dnaJ hsp.

8. The method of claim 7, wherein the human dnaJ hsp is HSJ1, HDJ1 or HDJ2.

9. The method of claim 8, wherein the peptide is homologous to a peptide portion of a bacterial dnaJ hsp

10. The method of claim 9, wherein the peptide is:
ASYYEILDVPRSASA (SEQ ID NO:9),
KDYYQTLGLARGASD ,(SEQ ID NO:10),
TTYYDVLGVKPNATQ (SEQ ID NO:11),
KKAYRRKALQWHPDK (SEQ ID NO:12),
KRAYRRQALRYHPDK (SEQ ID NO:13),
KKAYRKLALKYHPDK (SEQ ID NO:14),
FRSVSTSTTFVQGRR (SEQ ID NO:15),
PGMVQQIQSVCMECQ (SEQ ID NO:16),
GRRITTRRIMENGQE (SEQ ID NO:17), or
any combination thereof.

11. The method of claim 8, wherein the peptide is not homologous to a peptide portion of a bacterial dnaJ hsp.

12. The method of claim 11, wherein the peptide is:
QAYEVLSDAKKRELYD (SEQ ID NO:18),
EAYEVLSDKHKREIYD (SEQ ID NO:19),
SGPFFTFSSSFPGHS (SEQ ID NO:20),
DGQLKSVTINGVPDD (SEQ ID NO:21),
DLQLAMAYSLSEMEA (SEQ ID NO:22),
EDLFMCMDIQLVEAL (SEQ ID NO:23),
LCGFQKPISTLDNRT (SEQ ID NO:24),
RTIVITSHPGQIVKH (SEQ ID NO:25),
GRLIIEFKVNFPENG (SEQ ID NO:26), or
any combination thereof.

13. The method of claim 1, wherein modulating the immune response comprises augmenting or inducing an inflammatory response in the subject.

14. The method of claim 13, wherein the peptide has pro-inflammatory activity, and wherein augmenting or inducing the inflammatory response comprises administering the peptide under immunizing conditions.

15. The method of claim 13, wherein the peptide has anti-inflammatory activity, and wherein augmenting or inducing the inflammatory response comprises administering the peptide under tolerizing conditions.

16. The method of claim 13, wherein augmenting or inducing the inflammatory response comprises increasing a level of interferon gamma (IFNγ), tumor necrosis factor-alpha (TNFα), or both in the subject.

17. The method of claim 13, wherein augmenting or inducing the inflammatory response comprises increasing a level of interleukin-1 (IL-1), IL-6, IL-12, IL-23, or a combination thereof in the subject.

18. The method of claim 13, wherein augmenting or inducing the inflammatory response comprises decreasing a level of IL-4, IL-10, transforming growth factor-beta (TGFβ), or a combination thereof in the subject.

19. The method of claim 1, wherein modulating the immune response comprises reducing or inhibiting an inflammatory response in the subject.

20. The method of claim 19, wherein the peptide has anti-inflammatory activity, and wherein reducing or inhibiting the inflammatory response comprises administering the peptide under immunizing conditions.

21. The method of claim 19, wherein the peptide has pro-inflammatory activity, and wherein reducing or inhibiting the inflammatory response comprises administering the peptide under tolerizing conditions.

22. The method of claim 19, wherein reducing or inhibiting the inflammatory response comprises increasing a level of IL-10, IL-4, TGFβ, or a combination thereof in the subject.

23. The method of claim 19, wherein reducing or inhibiting the inflammatory response comprises decreasing a level of IFNγ, TNFα, or both in the subject.

24. The method of claim 19, wherein augmenting or inducing the inflammatory response comprises decreasing a level of IL-1, IL-6, IL-12, IL-23, or a combination thereof in the subject.

25. The method of claim 1, wherein administering the peptide comprises administering the peptide under immunizing conditions.

26. The method of claim 25, wherein administering the peptide under immunizing conditions comprising administering the peptide intradermally, subcutaneously, or intramuscularly.

27. The method of claim 25, wherein the peptide is formulated in a composition, and wherein the composition further comprises an immunoadjuvant.

28. The method of claim 1, wherein administering the peptide comprises administering the peptide under tolerizing conditions.

29. The method of claim 28, wherein administering the peptide under tolerizing conditions comprising administering the peptide mucosally.

30. The method of claim 28, wherein administering the peptide under tolerizing conditions comprising administering the peptide intradermally, subcutaneously, or intramuscularly.

31. The method of claim 1, wherein the subject has an immunological disorder.

32. The method of claim 31, wherein the immunological disorder is an autoimmune disease.

33. The method of claim 32, wherein the autoimmune disease is an arthritis.

34. The method of claim 33, wherein the arthritis is articular juvenile idiopathic arthritis.

35. The method of claim 1, wherein the subject suffers from an infectious disease, an inflammatory bowel disease, or a cancer.

36. A method of modulating immunoeffector cell responsiveness, the method comprising contacting immunoeffector cells with a peptide portion of a dnaJ heat shock protein (hsp) to the subject.

37. The method of claim 36, wherein the dnaJ hsp is a bacterial dnaJ hsp.

38. The method of claim 37, wherein the bacterial dnaJ hsp is an *E. coli* dnaJ hsp selected from:

QDYYEILGVSKTAEE (SEQ ID NO:1),
RKAYKRLAMKYHPDR (SEQ ID NO:2),
QKRAAYDQYGHAAFEQ (SEQ ID NO:3)
QGFFAVQQTCPHCQG (SEQ ID NO:4),
SKTLSVKIPGAVDTG (SEQ ID NO:5),
GDLYVQVQVKQHPIF (SEQ ID NO:6),
YCEVPINFAMAALGG (SEQ ID NO:7),
PINFAMAALGGEIEV (SEQ ID NO:8), or
any combination thereof.

39. The method of claim 36, wherein the dnaJ hsp is a eukaryotic dnaJ hsp.

40. The method of claim 39, wherein the eukaryotic dnaJ hsp is a human dnaJ hsp.

41. The method of claim 40, wherein the peptide is homologous to a peptide portion of a bacterial dnaJ hsp.

42. The method of claim 41, wherein the peptide is:
ASYYEILDVPRSASA (SEQ ID NO:9),
KDYYQTLGLARGASD (SEQ ID NO:10),
TTYYDVLGVKPNATQ (SEQ ID NO:11),
KKAYRRKALQWHPDK (SEQ ID NO:12),
KRAYRRQALRYHPDK (SEQ ID NO:13),
KKAYRKLALKYHPDK (SEQ ID NO:14),
FRSVSTSTTFVQGRR (SEQ ID NO:15),
PGMVQQIQSVCMECQ (SEQ ID NO:16),
GRRITTRRIMENGQE (SEQ ID NO:17), or
any combination thereof.

43. The method of claim 42, wherein the peptide is not homologous to a peptide portion of a bacterial dnaJ hsp.

44. The method of claim 43, wherein the peptide is:
QAYEVLSDAKKRELYD (SEQ ID NO:18),
EAYEVLSDKHKREIYD (SEQ ID NO:19),
SGPFFTFSSSFPGHS (SEQ ID NO:20),
DGQLKSVTINGVPDD (SEQ ID NO:21),
DLQLAMAYSLSEMEA (SEQ ID NO:22),
EDLFMCMDIQLVEAL (SEQ ID NO:23),
LCGFQKPISTLDNRT (SEQ ID NO:24),
RTIVITSHPGQIVKH (SEQ ID NO:25),
GRLIIEFKVNFPENG (SEQ ID NO:26), or
any combination thereof.

45. The method of claim 36, wherein contacting the immunoeffector cells comprises administering the peptide to a subject, wherein said contacting occurs *in vivo*.

46. The method of claim 36, wherein contacting the immunoeffector cells is performed *in vitro*.

47. The method of claim 46, further comprising administering the immunoeffector cells to a subject, thereby modulating an immune response in the subject.

48. The method of claim 47, wherein the immunoeffector cells are autologous with respect to the subject.

49. The method of claim 47, wherein the immunoeffector cells are allogeneic with respect to the subject.

50. The method of claim 47, wherein modulating the immune response comprises augmenting or inducing an inflammatory response in the subject.

51. The method of claim 47, wherein modulating the immune response comprises reducing or inhibiting an inflammatory response in the subject.

52. The method of claim 36, wherein the immunoeffector cells are T cells.

53. The method of claim 36, further comprising contacting the immunoeffector cells with an immunoadjuvant.

54. The method of claim 53, wherein the immunoadjuvant is a cytokine.

55. The method of claim 54, wherein the cytokine is a pro-inflammatory cytokine.

56. The method of claim 55, wherein the cytokine is an anti-inflammatory cytokine.

57. A peptide selected from any one of SEQ ID NOS:1 to 26.

58. A chimeric polypeptide, comprising the peptide of claim 57 operatively linked to at least one heterologous polypeptide.

59. A composition, comprising at least one peptide of claim 57.

60. The composition of claim 59, comprising a plurality of said peptides.

61. The composition of claim 60, which further comprises a physiologically acceptable solution.

62. The composition of claim 57, which further comprises an immunoadjuvant.

63. The composition of claim 62, wherein the immunoadjuvant is a cytokine.

64. The composition of claim 63, wherein the cytokine has pro-inflammatory activity.

65. The composition of claim 63, wherein the cytokine has anti-inflammatory activity.

66. The composition of claim 62, wherein the immunoadjuvant comprises Freund's complete adjuvant, Freund's incomplete adjuvant, or alum.

67. A polynucleotide encoding the peptide of claim 57.

68. The polynucleotide of claim 67, which is a double stranded deoxyribonucleic acid molecule.

69. A recombinant nucleic acid molecule, comprising the polynucleotide of claim 67 operatively linked to at least one heterologous nucleotide sequence.

70. The recombinant nucleic acid molecule of claim 69, wherein the heterologous nucleotide sequence comprises a transcription regulatory element, a translation regulatory element, or a combination thereof.

71. The recombinant nucleic acid molecule of claim 69, wherein the heterologous nucleotide sequence encodes a polypeptide.

72. A vector, which contains the polynucleotide of claim 67.

73. A cell, which contains the polynucleotide of claim 67.